

## **REMARKS**

### **Summary of the Office Action**

Claims 1-39 are currently pending and at issue in the present application. Applicant respectfully submits no new matter has been added by this Reply. Claims 1-39 are rejected.

Claims 1-39 are rejected under 35 U.S.C. §102(b) as unpatentable over U.S. Patent 6,396,926 to Takagi et al. ("Takagi"). Applicant request reconsideration of these rejections, in light of the amendments and the below remarks.

### **I. Substantive Rejection Under 35 U.S.C. §102**

Examiner has rejected Claims 1-39 under 102(b) as anticipated by Takagi

35 U.S.C. 102(b) states:

A person shall be entitled to a patent unless—

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### **Cited Art – Takagi Patent**

The Examiner indicates that the Takagi reference teaches a method for decrypting a ciphertext obtained from a plaintext using a first and second public key, by applying the Chinese remainder theorem (claim 1). The public key N, or public modulus N, is generated from private keys by **at least squaring** one of the private keys, thus making the public modulus N a **squareful number**. Further, Takagi describes an authentication method for verifying the sender-receiver message (claim 5); a decryption apparatus (claim 9); a cipher communication system, comprised of a sender apparatus for the encryption/decryption key generation processing unit,

and a receiver apparatus containing a calculation processing unit, and a decryption processing unit (claim 10); an authentication message sender apparatus, comprising an encryption/decryption key generation processing unit, an authentication message hashing processing unit, and an authentication encryption processing unit (claim 11).

#### Limitations of Rejected Claims

The independent claims were amended to clarify the present invention and to overcome the rejections of the examiner, for substantive rejections.

#### Applicant's Cryptographic Communication Device

Applicant's invention provides systems and methods for encryption of messages using a public and private key cryptosystem. In a method for secure communication or transmission of electronic matter, according to the present invention, wherein the matter is encrypted and decrypted using RSA methods including the steps of: providing at least two private keys and at least one public key for decrypting an electronic communication or transmission, wherein the at private keys are based upon a multiplicity of **distinct** primes that, when multiplied produce a corresponding one of the at least one public key that is **not a squareful number**; encrypting/decrypting the communication or transmission using the at least one public key; and providing at least two private keys capable of decrypting/encrypting the communication or transmission using a single one of any of the at least two private keys. There is structure provided in the amended claims, including a computer and/or computer-type device capable of communicating on a network (supported by originally filed specification, including page 19) to address the claims rejections under 101 and 112.

#### Analysis of Cited Art to Rejected Claims

Takagi describes a method of encryption that generates a **squareful** modulus as the product of a series of **distinct** prime factors wherein one of the prime factors is raised to an exponent k, thus generating a product from **non-distinct** prime factors. Takagi then teaches the decryption of the encoded message using all of the distinct prime factors. The present invention, instead, teaches the generation of a **squarefree** modulus and the decryption of the resulting encoded message using **less than all** of the **distinct** prime factors. The claims have been amended to distinguish over the prior art.

#### Claims

In order for a reference to act as a §102 bar to patentability, the reference must teach each and every element of the claimed invention. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983).

The present invention systems and methods for encrypting/decrypting messages operable on a computer system, computer-type device and/or computer network provide the activity on a machine and/or product, including the steps of: providing a public key cryptosystem including a computer operable to generate at least one key for encrypting/decrypting at least one message, the public key cryptosystem having a predetermined number of **distinct** prime factors used for the generation of a **squarefree** modulus N and an exponent e; wherein a proper subset of **less than all** of the **distinct** prime factors of the modulus N are used to decrypt messages that are encrypted using the public exponent e and the public modulus N, where e and N are calculated using RSA methods, and encryption of the message occurs using RSA methods. These steps and others in the independent claims, now amended, are not included in the Takagi patent.


Without the required teaching of each element as set forth in the claims, it is improper for the Examiner to continue such rejections under §102(e). Therefore, Applicants respectfully request withdrawal of this rejection as to independent Claims 1, 2, 3, 5, 12, 13, 19, 23, 27, 30, 31, 34, 35, 36, 37, 38 and 39. Further, because remaining claims depend from one of these independent claims, adding additional limitations to each, the rejection of these dependent claims under § 102(e) should also be withdrawn. Applicant respectfully requests that the rejections be withdrawn as to Claims 1-39 and those claims allowed.

## CONCLUSION

The Office Action of August 4, 2009, has substantively rejected Claims 1-39 under 35 U.S.C. §102 as unpatentable over Takagi. The amendments and remarks of Applicant address these rejections. Accordingly, Applicant believes the claims are in condition for allowance. Reconsideration of the pending objections and rejections is respectfully requested, and a notice of allowance is respectfully sought. If any issues remain outstanding, incident to the allowance of the application, Examiner Zia is respectfully requested to contact the undersigned attorney at (919) 268-4236 or via email at [jinan@trianglepatents.com](mailto:jinan@trianglepatents.com) to discuss the resolution of such issues, in order that prosecution of the application may be concluded favorably to the applicant, consistent with the applicant's making of a substantial advance in the art and particularly pointing out and distinctly claiming the subject matter that the applicant regards as the invention.

This Office Action response is being submitted on February 4, 2010 via EFS-Web to USPTO with a Petition to Revive under 37 CFR 1.137(a), along with the Petition fees, and the Request for Continued Examination fee.

Respectfully submitted,



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